



CLIMATE CHANGE AND THE SALEM MARITIME NATIONAL HISTORIC SITE

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"Climate change is fundamentally the greatest threat to the integrity of our national parks that we have ever experienced. Current science confirms the planet is warming and the effects are here and now."
- National Park Service -



Is Climate Change Real?

Climate Change is Real.

The Intergovernmental Panel on Climate Change found that 97% of scientists agree that it is real. And they agree that the main cause is human activity: industrialization based on the use of fossil fuels and resulting carbon emissions.

Can Climate Change Be Slowed Down or Reversed?

Only action by human beings can save the world – our countries, cities, towns and our National Parks – from the worst impacts of climate change.

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What are the Local Impacts of Climate Change?

HIGHER TEMPERATURES

Between 1895 and 2011 the average temperatures in the Northeast USA increased by 2°F.

The increase over the next century may be more than 10°F.

By 2070 there may be 90 days of over 90°F in Salem.

SEA LEVEL RISE

Sea levels in Salem are rising.

By the end of the century sea levels could rise over 10' (meters).

Combined with storm surge, the possibilities of extreme flooding increase.

EXTREME PRECIPITATION

By 2050 Salem will likely experience many more rain or snowfall events similar to Winter Storm Nemo in 2013.

This storm dumped over 2' of snow and produced hurricane-force winds.



AND
HISTORIC SITE

facts

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CLIMATE CHANGE AND THE NATIONAL PARK SERVICE

Silk Printing, Climate Change Images and the National Park Service

Dramatic shifts in the landscape and cultural treasures of our national parks are a result of the effects of climate change. We often find it difficult to understand through scientific facts and figures alone.

Susan Quattrone, silk print/environmental planner and Leslie Bartlett, photographic designer, collage Susan's silk paintings of the effects of climate change, fire, drought, rising seas or torrential storms, on the selected landscape as portrayed in a photograph.

To create Climate Change images, photographs of Yellowstone National Park, the Statue of Liberty National Monument and Ellis Island, and Joshua Tree National Park have been collaged with Susan's silk paintings.



For more scientific information and resources relating to the effects of climate change on these national parks as well as Glacier National Park, please turn around and read the placard in front of this exhibit.

Yellowstone National Park



Statue of Liberty National Monument and Ellis Island



Joshua Tree National Park



Grinnell Glacial Recession Over Time Taken from the summit of Mount Gould, Glacier National Park, Montana

The USGS Repeat Photography Project was begun in 1967 to document the retreating glaciers in Glacier National Park, Montana. The striking image pairs, created by rephotographing from the same location as historic photos, reveal dramatic glacier loss for many of the glaciers.

All of the glaciers in Glacier National Park, and most world-wide, are responding to the warming climate by melting. The repeat photographs have become some representations of the effects of climate change. The project has rephotographed over 80 historic images and continues to add new image pairs to broaden the number of glaciers documented each year.



"LE RÉCHAUFFEMENT CLIMATIQUE
N'A PAS DE FRONTIÈRE"

"EL CAMBIO CLIMÁTICO
NO RESPETA FRONTERAS"

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CLIMATE CHANGE AND HOPE FOR OUR FUTURE

HOPE FOR OUR FUTURE IN SALEM

Salem Maritime National Historic Site
is actively looking to be
'Climate Friendly and Climate Ready.'



Old Fishing Boat on Quay

STEPS THAT ARE BEING TAKEN

ADAPTATION

ADAPTATION strategies manage
the effects of climate change

Recent
State of the, design and structural solutions
and business plans for Salem Maritime

Plan
Recent potential climate impacts in planning
for future management of Salem Maritime

Increased vulnerability
Identify, evaluate, and plan for impacts of climate change

1. Review for the existing and future conditions

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MITIGATION

MITIGATION strategies to slow down
the causes of climate change

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and climate friendly, best

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The choices you make today do make a difference.



Derby Wharf Sunrise ©2016 Leslie D. Bartlett

What Kind Of World Do We Want to Inhabit?

Although
climate change
has been revealed
by science,
it's not just
about science.

It's about what sort of world we want to live in.



"ZMIANY KLIMATYCZNE
NIE UZNAJĄ ŻADNYCH GRANIC"

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CLIMATE
tells us what clothes
to keep in our closet.

Joshua Tree National Park
1. NPS Website
2. USFS Website

1. NPS Websites
2. 'Climate Change Threatens an Iconic Desert Tree', *Osha Gray Davidson, National Geographic*, Oct. 2015
3. 'Drought: Hottest Decline of the Joshua Tree, California Desert' *Journal*, *Los Angeles Times*, LA Times, June 2015
4. 'Global Warming May Push Joshua Tree Out of Namaste National Park', *Climate Central*, June 2011
5. 'Past and ongoing shifts in Joshua tree distribution suggest future modeled range contractions', *Core K.L., Inoué K., Easdale J., Gerke G., Duffy-RB, Toney, T.*, *Applied Ecology*, Jan 21 (3) p 137-43

1. NPS Web Sites
2. "Global Warming: The Great Thaw" *Los Angeles Times*, Nov. 2005
3. *Removal of Glaciers in Glacier National Park*, Daniel Hyatt and Lisa Winkler, USGS
4. *Climate Change Trends, Impacts and Vulnerabilities in Glacier National Park, USA**
Patrick Gonzalez, Natural Resource Stewardship and Science, US NPS, Oct. 2004
5. *Documenting Glaciers in the Dying Days of Ice*, Brian Kahn, August 3, 2004, *Science* Center

- Statue of Liberty and Ellis Island National Monument
1. NPS Websites
2. World Heritage and Tourism in a Changing Climate, 2016
UNESCO, United Nations Environment Programme, Union of Concerned Scientists

2. World Heritage and Tourism in a Changing Climate 2016. UNESCO, United Nations Environment Programme, Union of Concerned Scientists.

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SQ & JB Artist Collaboration

Non-patented drugs: 10

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Only action by human beings can
- our countries, cities, towns and
from the worst impacts of climate

The most important war in history was the twenty-first century – the intense

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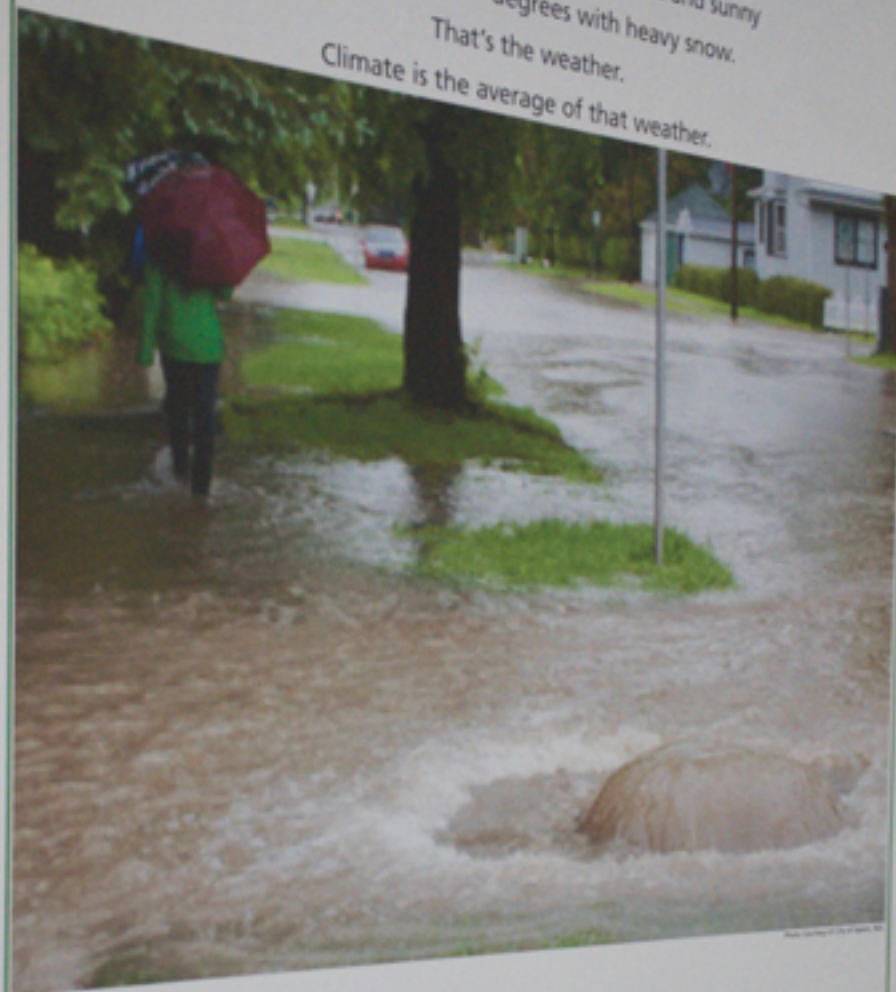
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& LB ORATION

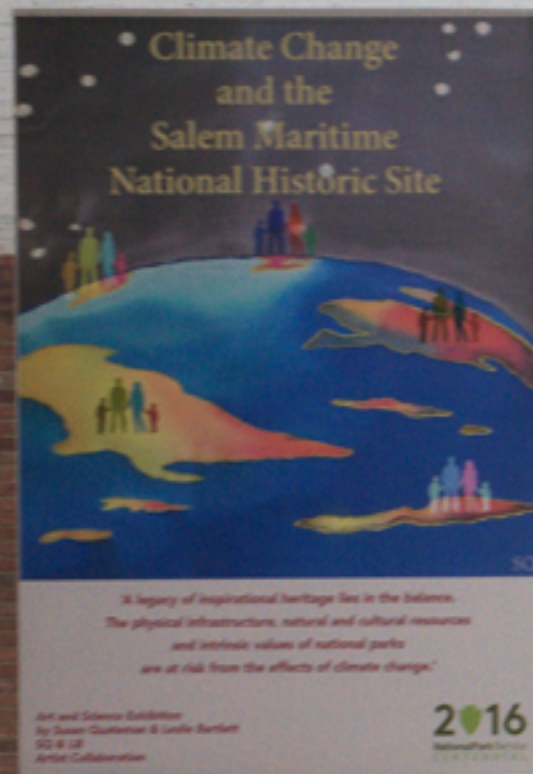
ORATION

Climate is what you expect, weather is what you get.
Weather is what you see outside on any particular day.
So, for example, it may be 75° degrees and sunny
or it could be 20° degrees with heavy snow.
That's the weather.
Climate is the...



For example, you can expect snow in the Northeast in January or for it to be hot and humid in the Southeast in July. This is climate.

The climate record also includes extreme values such as record high temperatures or record amounts of rainfall. If you've ever heard your local weather person say "today we hit a record high for this day," she is talking about climate records. So when we are talking about climate change, we are talking about changes in long-term averages of daily weather. In most places, weather can change from minute-to-minute, hour-to-hour, day-to-day, and season-to-season. The average of weather over time and space.



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